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Theoretical Orientation of Community based Disaster Risk Management

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Theoretical Orientation of Community based Disaster Risk Management

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1. INTRODUCTION

The paradigm shift of disaster management from reactive emergency approach to proactive disaster risk reduction approach as identified by Abarquez and Murshed, (2004) presents a justification to the emergency of community participation rather than external emergency support. The starting point of community understating of hazards and disasters is through Participatory Rapid Appraisal (PRA) and Community Driven Development (CDD) in community mobilisation and local development. The paradigm shift in disaster management from the traditional relief and emergency response approach to the proactive disaster risk reduction approach is very critical to empower the community at risk. The paper concludes by highlighting community based risk reduction model as a sustainable approach of reducing disaster risks.

a) Background

The lack of comprehensive governance and legal framework usually (top-down approach) contributes to the failure to set clear disaster risk reduction targets for communities-at-risk (Holloway,

2003; Pelling and Wisner, 2009). Furthermore, governments or nations must ensure that Disaster Risk Reduction (DRR) is a national and local priority through community participation so that local needs are met (Priority for action No.1 of the Hyogo Framework of Action (UNISDR, 2004).

The most effective way to reduce disaster risks in informal settlements is to work with the local people to identify and analyse their vulnerability and capacities, and to develop and implement a disaster risk management action plan which will support them in their progress towards sustainable living (Venton and Hansford, 2006). Development efforts and strategies in CBDRM are focused on helping the poor and supporting them to become increasingly self-reliant in dealing with many of the disaster risks they face in their daily life (Allen, 2006; IFRC, 2009:59).

b) Historical perspective of CBDRM

The history of disaster management dates as far back as around two hundred years and beyond, to when the federal government in the West (United States of America) participated in disaster activities that were related to war (Drabek, 1991; Mc Entire, 2007). After the Second World War, the community based disaster risk reduction model received recognition at national and local levels by planning professionals. It was called the professional model or Comprehensive Disaster Management (CDM). However, since 1945, debates on disaster research have identified some inadequacies in the Comprehensive Emergency Management (CEM), as overlooking the *social constructs* of disaster reduction (Newport and Jawahar, 2003; Trim, 2004). The difference between CEM and CDM concentrated on emergency relief operations while CDM addressed social constructs which expose communities to disaster risks.

In the mid-1980s, the comprehensive disaster management approach was perceived by many scholars as being top-down, expert-led and a technology driven approach. This approach was alleged to have failed to address community's needs and priorities of reducing vulnerabilities among the poor (Maskery, 1989). It focussed on addressing the vulnerability of communities at the expense of the local community coping capacities. The United Nations International Decade for Natural Disaster Reduction (UN-IDNDR, 1990 - 1999) conference resolved to

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change this approach in disaster management from post-disaster relief and rescue to pre-disaster mitigation and preparedness efforts. This was to empower local communities, governments, NGOs and civil society organisations in the disaster management decision-making processes. Emergency relief projects are not sustainable in the long run. Ever since then, governments and NGOs have been putting tremendous efforts into reducing vulnerability by enhancing sustainability in reconstruction and rehabilitation by disaster management programmes (Shaw, Gupta and Sharma, 2003).

During the 1990s, practitioners and policy makers rapidly adopted Community based Disaster Risk Management (CBDRM) as an alternative to top-down interventionist approaches in disaster management (Heijmans, 2009; Allen, 2006). So far, research has shown that Community based Disaster Risk Reduction Approaches (CBDRA) yield the best results and the most trustworthy primary data to help understand the disaster risk profile of communities (Anderson and Woodrow, 1998; Abarquez and Murshed, 2004; UNDP, 2009: 2; Pelling and Wisner, 2009). For the purpose of this study, the terms Community based Disaster Management and Disaster Reduction Approaches (CBDRM/CBDRA) are used interchangeably as they emphasise the context of community. Disaster risk management implies a general process of addressing disaster risks while the approach is specific in terms of methodology. Of late, community based 'bottom-up' approaches to disaster risk reduction have become a common strategy for development at local level (Uitto and Shaw, 2006). Over the last twenty years (1994-2014) or so, 'top - down' emergency response approaches in disaster risk reduction alone have failed to address the local needs of vulnerable communities (Shaw, 2011). In whatever form a disaster occurs, it needs to be managed, and society needs to prepare for it by either reducing its impact or by recovering from it. The management of disasters in the past focused on emergency response. Emphasis was on relief and emergency supplies for disaster victims. People affected by disasters were regarded as being vulnerable and passive victims or recipients of aid and not as potential resources for development, capable of sustaining their own livelihood (Heijmans, 2009; 2004).

Evidence shows that most top-down disaster risk management and response programmes have failed to address the specific local needs of vulnerable communities (Abarquez and Murshed, 2004). Programmes that ignore the potential of local knowledge, resources and capacities have in some cases even increased people's vulnerability. However, grassroots or local level strategies should be linked to appropriate top-down strategies and government interventions (Anderson and Woodrow, 1998; DFID,

2005; Fraser *et al.*, 2006). Successful community based DRR interventions create resilient communities, whilst reducing vulnerability through development projects (UNDP, 2004; UNISDR, 2004; DFID, 2005). In this regard, the use of community's capacity and resources is crucial to ensure wide acceptance, ownership, participation and sustainability of DRR programs (Shaw *et al.*, 2011). The community is, after all, the key factor and primary beneficiary of DRR interventions.

Research conducted on the approaches used in managing disasters in the recent past has shown that disaster mitigation is becoming more and more community based (Twiggy and Bhatt, 1998; Quarantelli, 1989; Mileti, 2001 and Shaw and Okazaki, 2003). It has become imperative to put more effort in incorporating disaster risk management aspects into the holistic development planning for communities. As Maskrey (1989) rightly points out, disaster (risk) management should not be treated as a single issue but should be incorporated into the socio-economic activities of local people. CBDRM approaches improve the position of impoverished, vulnerable, disaster-affected people by addressing the root causes of their vulnerability, and by recognising their fundamental right to participate in decisions that have an impact on their lives (UNISDR, 2005; ADPC, 2004; Li, 2002).

II. COMMUNITY VULNERABILITY TO DISASTERS

Disasters affect people at different levels based on their capacity and vulnerability to withstand them. According to the International Strategy for Disaster Reduction (ISDR), (2009), vulnerability refers to long-term factors and conditions that adversely affect the ability of a community to respond to, cope with or recover from the damaging effects of the occurrence of hazards or disaster events. Furthermore, Mileti, (1999) and McEntire, (2001) argue that whether one considers a community, an individual, the economy or a structure, vulnerability depends upon the coping capacity relative to the impending impact of a hazard. Generally, poverty is an underlying cause of vulnerability in most communities and informal settlements in particular. The poor are particularly vulnerable to disasters due to their already limited access to sustainable daily livelihood assets such as food security and access to basic services of shelter, water and sanitation.

The poor in urban areas are exposed to disaster risks due to factors such as increasing levels of unemployment and lower wages, higher prices of basic goods, subsequent limited food security, and residing in densely populated locations with poorly built houses on land that places them at risk (UNDP, 2013; UNISDR, 2004, p.xi). The UNHABITAT (2007) Report confirms the assertion that the poor do not intentionally take action to reduce their exposure to environmental risks. This is

because they are consumed in their immediate demands for survival amidst high levels of poverty. A vulnerable community has no capacity to use local resources or get adequate support outside their locality to manage disaster risks.

Vulnerability is not only a natural phenomenon of lacking capacity, but also a result of an entire range of constantly changing biophysical, social, economic, cultural, political and even psychological factors that shape people's lives and create the environment in which they live (Clark *et al.*, 2000; Twigg, 2001:6 and Kizilay, 2010).

a) Disaster risk reduction and the community

Communities become susceptible to disaster risks because they lack the ability to use available skills and resources to manage disaster risks they are exposed to. Coping capacities therefore contribute to the reduction of disaster risks and building resilience through active participation of the affected community (UNISDR, 2009; Blakie, 1994; Mileti, 1999). Traditionally, disaster management interventions were framed as emergency approaches that overlooked the role a local community could play in reducing vulnerability (Abarquez and Murshed, 2004). During disaster events, some support institutions view vulnerable communities as victims and beneficiaries of relief supplies with no capacity to help themselves (Wisner *et al.*, 2007).

In assessing the coping strategies, interventions should start with the community's assets. Instead of concentrating on community problems that ought to be solved, or physical infrastructure that should be fixed, the focus should be on identifying the strengths of the local community (Schpper and Pelling, 2006). There has to be collaboration among stakeholders, the community, the government and development based organisations present in the community. Capacity can also refer to human resource development of skills, attitudes and values at both individual and community level. It goes beyond the usual training and technical assistance to the ability to deliver or implement measures better (Alsop and Kurey, 2005; Moore, 1995). Disaster risk reduction initiatives should therefore concentrate on building the capacity of the local community. However, this does not mean that technical and financial assistance should be left for the community alone to source. The government and other stakeholders should supplement efforts made by the community. It is, after all, the responsibility of the government (DMMU) to provide a safety net for its vulnerable citizens (GRZ, 2005).

Disaster stricken communities, especially those in informal settlements, receive inadequate attention from the government. However, local communities have internal social and economic structures that help them sustain their livelihood. The resources and the skills that people possess might not allow them to have more

control over shaping their own future and coping with disaster risks (Abarquez and Murshed, 2004). Coping capacity has to do with what a community possesses locally, as well as the potential for external support. Promoting community participation - particularly among those who live in disaster prone areas and the vulnerable members - must be prioritised so that they can adapt and cope with disaster risks locally.

A community is vulnerable to disaster risks if there is a high probability of occurrence of an event and its negative consequences (UNISDR, 2009). A disaster risk from the community's perspective can be defined as the probability of harmful consequences, or expected losses (lives lost, damage to property and/or the environment, livelihood lost, and the disruption of economic activities or social systems) due to the interaction between humans, hazards, and vulnerable conditions (UNISDR, 2002:24). Disaster risk reduction intervention therefore takes a multi-disciplinary approach. They recognise the importance of links between socio- economic and political interaction and hazards and the wider environment (Lewis, 1999; Wisner *et al.*, 2004; Tran and Shaw, 2007).

Disaster risks are expressed in a variety of contexts. For instance, flooding may cause damage to physical infrastructure as well as an outbreak of water borne illnesses such as diarrhoea and cholera. Exposure to disaster risks is usually associated with failure by a community to cope with particular hazardous events. Sayers *et al.*, (2002:36-38) define risk as the probability of an event occurring, linked to its possible consequences (Dilley and Boudreau, 2001; Tobin and Montz 1997:282 and UNISDR, 2007), on the other hand, define risk as a function of the relationship between hazards to which a household is exposed and the household's vulnerability (V) to that specific hazard (H).

$$\text{Disaster Risk (R)} = \text{hazard (H)} \times \text{vulnerability (V)}$$

(Wisner *et al.*, 2004).

The risk notation by Wisner *et al.*, (2004) above, views vulnerability as the determining factor in the exposure of a community to disaster risks. Risk situations normally depend on the level of social, economic or geographical status of a community. A poor community with limited access to economic opportunities will find themselves settled in a location that is fragile and disaster prone and normally illegally obtained. DRR interventions should focus on reducing vulnerability of communities from severe shocks and preventing hazards from becoming disasters (Christian Aid, 2009; DFID, 2006).

Vulnerability of informal settlements to hazards is a common phenomenon (Mulenga, 2003). Informal settlements become vulnerable to disaster risks by virtue of their residences located in marginal areas with geographical, topographical and hydro geological

characteristics that make them unsafe for settlement (Oxfam, 2007). A hazard originates from “human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage” (UNISDR, 2009; Wisner *et al.*, 2007:5; SADC,2003:12). Such settlements are located on marginal lands with no proper land use planning, poor physical infrastructure such as substandard housing units with limited basic services provided (ECZ, 2008: 118). This is common in most informal settlements in developing countries (World Bank, 2001). Mitchell (2001) considers hazards to be a result of human ecological interaction that can generate a disaster. Typical examples of hazards can include: poorly constructed housing units, lack of access to safe water and sanitation facilities and marginal locations. Community vulnerability to disaster risks can be divided into three categories: physical/ material, social and attitudinal/ motivational (Anderson and Woodrow, 1990).

Physical vulnerability relates to the fact that poor people usually include those people with limited material resources to help them cope with disasters. The poor in most cases reside on marginal lands; they do not have any savings or insurance; they are in poor health, often harsh environments, directly dependent on local ecosystems services (Tyler, 2006; Prevention Consortium, 2008:9).

Social vulnerability is associated with communities that are marginalised in economic terms. People who are economically stable are more secure than the poorest when disasters occur (Oxfam, 2007).

Attitudinal or motivational vulnerability refers to the community's lack of confidence to adopt DRR interventions as noted by Pelling, (2007). This is the most common cause of continuous vulnerability and exposure of communities settled on marginal land or informal settlements. They usually lack confidence to sustain themselves and find lasting solutions to their problems. Despite interventions that may be in place such as evacuation to safer land, people will usually return to the risk homeland (Abarquez and Murshed, 2006; Nchito, 2007).

b) Community participation and response to DRR

In the context of disaster risk reduction and management, a community is understood as people living in one geographical area, in close proximity, and who share common interests, values, services and problems (Yoon, 2005; Abarquez and Murshed, 2004). They may be exposed to similar disasters and perform similar socio-economic activities to ensure their livelihood. Furthermore, a community can be a group of people affected by a disaster who can also assist each other to mitigate hazards and reduce vulnerability within their locality.

Lack of community participation in DRR interventions in dealing with disaster risk affecting them may at times make the community dependent on relief and emergency supplies. Community participation in DRR has of late been preferred as an effective approach to reducing exposure to disaster risks.

c) From emergency relief to community participation

During the World Conference on Disaster Reduction (UNISDR, 2005) held in Kobe Japan in 2005, the Hyogo Framework for Action (HFA) 2005-2015 was adopted. Its main goal was to build resilience in nations and communities to cope with disasters and subsequently achieving substantive reduction in loss of human lives by 2015 (UNISDR, 2004). The HFA outlined five areas of priorities for action as well as guiding principles and practical means for achieving disaster resilience for vulnerable communities in the context of sustainable development. These include:

- i. making disaster risk reduction a national priority;
- ii. knowing the risk and taking action;
- iii. building understanding and awareness;
- iv. reducing risk factors; and
- v. being prepared and ready to act.

The main thrust of the HFA lies in identifying ways was of building resilience in nations and communities to deal with disaster risks.

Today, barely a week goes by without news about a major disaster that results in death and destruction (Oxfam, 2007). These could be natural disasters or human-made disasters. Disasters wipe out developmental projects and slow down the pace of socioeconomic development, especially in developing countries with limited capacities (World Bank, 2001). It has been argued that disasters are a reflection of poor development planning (UNDP, 2004: 9; Pelling, 2003). The government has the responsibility to provide basic needs for the people such as infrastructure, roads, safe water and sanitation services. However, failure by governments to provide basic needs is the root cause of extreme poverty and vulnerability in least developed countries (World Bank, 2001). The prevalence of disasters is often attributed to natural forces that are beyond human control. Climate change has been identified as a major driver of disasters facing the globe today and will likely increase, resulting in massive losses, especially in developing nations (Warner and Ore 2006; IPCC 2009; Aalst, 2007). It must be noted that disasters not only reveal underlying social, economic, political and environmental problems, but contribute to worsening them (UNEP/ISDR, 2007). Disasters pose serious challenges to development by eroding well-deserved gains in terms of political, social and educational progress, including infrastructure and technological development. In most developing countries, natural disasters have constituted a heavy drag on development by undoing decades of

development efforts and reverse gains in poverty reduction (Nakagawa and Shaw, 2004; Nchito, 2007; UNISDR, 2008; Schipper and Pelling, 2006).

Community based development approaches are a fundamental form of empowerment of the local community and a compelling strategy for enforcing the transmission of ideas and claims from the bottom up to the top level (Allen, 2006). The approach is now viewed as a promising tool in achieving the goals of self-reliance and self-determination which are vital for community development (Uitto and Shaw, 2006; Ayers and Huq, 2009). Research has also shown that community disaster plans yield the best results and the most trustworthy primary data in understanding the disaster risk profiles of communities (Abarquez and Murshed, 2004; UNDP, 2007; 2009;2; Holloway *et al.*, 2008; Pelling and Wisner, 2009). Scholars Van Riet and Van Niekerk, (2012) describe Community Based Disaster Risk Assessment (CBDRA) as direct participatory actions taken by the at-risk communities aimed at applying local knowledge and experiences to analyse their own coping capacities. It involves mobilisation of local resources to develop tools and strategies for DRR, and to find possible lasting solutions for building resilience in communities.

In summary, Van Riet and Van Niekerk (2012) argue that DRR fundamentally implies reducing the socio-political, political, environmental and economic vulnerability of a community to natural and anthropogenic hazards such as droughts, floods and fires among others. Community based disaster risk reduction transforms a community by making it safer and more resilient (Pelling, 2007). This is done by assessing and monitoring risks that a community may be exposed to. The community at-risk is actively involved in the planning and decision making process about DRR. Pelling (2007) further suggests that both communities and local authorities (government) need capacity building and resources to manage and reduce exposure to disaster risk. This should be done through the sharing of information through raising funds to increase resources to assist with the implementation of DRR interventions.

d) *Creating a community that is disaster resilient*

A resilient community is one that has the capacity to absorb forces through adaptation and a community that can maintain certain basic functions and structures during disastrous events (Twigg, 2005). However, key questions one may ask are: *why is local community participation important in disaster risk reduction? What necessitated the shift from community based approaches to reactive disaster management by the governments and NGOs?*

Community based disaster risk management approaches have been adopted because they aim at building resilient communities. They raise people's

awareness of disaster risks, using intimate local knowledge, and they recognise pre-existing local structures, capacities and institutions (Heijmans, 2009; Wisner *et al.*, 2004; Tran and Shaw, 2007). More effort has been put into incorporating disaster management aspects into the holistic development of communities. As Maskrey (1989) points out, disaster management should not be treated as a single issue, but should be incorporated into the socio-economic activities of the local people. DRR activities should therefore assist communities to avoid, lessen or transfer the adverse effects of hazards. This has to be done with activities and measures for prevention, mitigation and preparedness. These measures include various activities, projects and programmes that the communities may identify after assessing and analysing the risks that they face. The community based approach is an ongoing process aimed at reducing vulnerability to natural hazards across all levels of society and socio-economic sectors. Its effectiveness depends on the need to recognise the cardinal role of the community in economic planning and policy making. The approach supports the inclusion of local knowledge and mitigation strategies to reduce vulnerability (Baumwoll, 2008; Allen, 2006).

Building resilient communities implies concentrating on the community's ability to reduce their own disaster risk. Communities directly vulnerable to hazards are the best placed to identify solutions for risk reduction (Wisner *et al.*, 2004). However, grassroots strategies should be linked with appropriate top - down strategies and local government interventions (Anderson and Woodrow, 1998; DFID, 2005; Fraser *et al.*, 2006). This ensures the sustainability of the approach that is adopted by the community and enables access to outside knowledge and skills that may assist in vulnerability reduction. Successful DRR activities create resilient communities whilst ensuring vulnerability is not increased through developmental efforts or other externally initiated activity (UNDP, 2004; UNISDR, 2004; DFID, 2005). This is possible only if the community at-risk actively participate in the DRR interventions.

c) *Community engagement in disaster risk reduction/development*

Chen *et al.*, (2006) argue that through a community based participatory approach, community members would learn how to analyse their vulnerable conditions and find ways of reducing disaster risks affecting them. Furthermore, there is a need to establish community organisation structures responsible for implementing DRRM risk management activities. Tenets of effective community participation are based on six key principles of community participatory approaches. These include: inclusion, equal partnership, transparency, sharing power, sharing responsibility,

empowerment and cooperation in the community (Table 2).

Table 1: Key Principles of Community Participatory Approach

Inclusion	Include all or representatives of all groups who would be vulnerable to disaster risks.
Equal Partnership	Recognising that every person has a skill, ability and initiative and has equal right to participate in the process regardless of their status.
Transparency	All participants must help to create a climate conducive to open communication and to building dialogue.
Sharing Power	Authority and power must be balanced evenly between all stakeholders to avoid the domination of one party.
Sharing responsibility	Stakeholders have equal responsibility for decisions that are made, and each should have clear responsibilities within each process.
Empowerment	local community special skills are encouraged to take responsibility for tasks within their speciality, but should also encourage others to be involved in order to promote mutual learning and empowerment.
Cooperation	Cooperation is very important; sharing everybody's strength reduces everybody's weaknesses.

Adapted from Egger and Majeres 1998; Wisner, 2005

III. SUSTAINABLE DEVELOPMENT AND DRR

These principles form a basis for the sustainable development and effective implementation of community owned development interventions (Table 2). Participation entails a shift in power from the traditional developmental agents (government and NGOs) to the local communities in need of uplifting their lives and aspirations (Sandström, 1994; Sen, 2000).

Despite attempts to move away from the top-down approaches of development planning, participatory approach faces a lot of challenges. One major challenge is scaling-up, given that DRR-related community knowledge is mostly scattered, fragmented, and often not well-documented (Shaw *et al.*, 2011).

There is a need for development agencies to explore partnerships between the local government, private sector, NGOs and community groups in order to upgrade indigenous knowledge systems from the current state of undocumented subjective practices to a respected body of applicable and useful knowledge (Osti, 2004).

Botes and Van Rensburg, (2000) identify key impediments to community participation in developmental activities. Many developmental projects are initiated by outsiders; thus, depending largely on development professionals for implementation and monitoring. Outsiders therefore claim to be the development experts whose role is to transfer knowledge and ideas to the vulnerable community. The community is seen as passive recipients and beneficiaries who depend on outsiders for capacity building in terms of knowledge and skills (GNDR, 2009; Hagelsteen, 2009).

This leads to their [outsiders] dominance in decision making and the implementation of programmes. As a result, many development programmes end up being externally driven rather than community driven (Provention, 2007).

Although development experts may question the capacity of local people to understand what they want and what is likely to be in their best interest (Schipper and Pelling, 2007; Chambers, 2008), many local community members often do not want to participate actively in imposed interventions because of past experiences where their expectations were not fulfilled (Wenger *et al.*, 2002). This situation undervalues the input and experiences of non-professionals or the community as a whole. Community participation in disaster risk reduction focuses on the community's ability to reduce their own disaster risk by identifying those directly impacted by hazards, viewing the community as being best placed to identify solutions for risk reduction (Wisner *et al.*, 2004).

However, grassroots strategies are linked with appropriate top-down strategies and local government interventions (Anderson and Woodrow, 1998; DFID, 2005; Fraser *et al.*, 2006). Critical factors to achieving a significant level of impact include the capacity of those taking actions (facilitators and the community), the information available at the local level and funding support for adaptation initiatives (Mc Gray *et al.*, 2007; IFRC and Pro Vention Consortium, 2009). This ensures the sustainability of any interventions adopted and enables access to outside knowledge which may assist in vulnerability reduction.

The emerging crisis in environmental risks and human security in African cities can be related to failure in social contracts. The contract is a much debated concept (Pelling and Dill, 2008), used to represent the balance of rights and responsibilities in society, including entitlements to basic needs which should be provided by the government. Community participation is often seen by governments as a means of legitimising the political system and as a form of social control. The state in most cases capitalises on the vulnerability of the community to win votes in the political arena. Governments, especially during the election periods, introduce a number of developmental projects in

response to the needs of the populace to gain political mileage (Davidson *et al.*, 2007; Morgan, 1993:6, in Botes and Van Rensburg, 2000). Such interventions include promises of improvements in the construction of infrastructure, provision of safe water and sanitation, including employment opportunities. These are usually short-term promises aimed at undermining the community's abilities in governing themselves. After elections are over, the community is unfortunately left at the same level of poverty and vulnerability to disaster risks as before (Walia, 2008:69). The general focus of DRR is enhancing the skills, knowledge and capacities of local communities through community development initiatives (GNDR, 2009; Hagelsteen, 2009).

IV. COMMUNITY BASED DISASTER RISK REDUCTION METHODOLOGY

There are multiple actors involved in the community based disaster risk reduction and management process. Basically two broad categories are involved: the insiders and the outsiders (Torrente *et al.*, 2008). Insiders refer to those individuals, organizations and stakeholders who are located within the community while outsiders are those located outside of the community. Both groups of actors however aim at reducing community vulnerability and enhance its capacities for disaster risk management (Torrente *et al.*, 2008).

The community based disaster risk reduction and management approach is beneficial to the local community. Holloway (2007) states that well-structured community based plans adhere to six principles that subsequently benefit the community at risk. External agents come with a pool of skills and knowledge and material and financial resources. The aim of outsiders in CBDRRM is to offer sustainable solutions to alleviate the vulnerability of the community to various kinds of hazards and disaster risks.

Holloway (2007) identifies the following six principles of CBDRRM:

- Create sense of ownership;
- Build local capacity;
- Collaboration amongst different stakeholders (NGOs, academic, government and community); Discourage swift campaigns and rapid drive assessment;
- Strengthen local livelihoods; and
- Participate in learning activities in the community.

The aim of community based disaster risk reduction is to create a sense of responsibility for intervention in implementing DRR activities by those who are at risk.

a) *Create sense of ownership of risk*

Vulnerable communities often lack awareness of the disaster risks they are exposed to (Abarquez and

Murshed, 2004; Rajiv *et al.*, 2012:1634; Pelling and Wisner, 2009). For instance, in Kanyama settlement, the citizens are involved in settling on flood-prone areas, drinking water from shallow open wells, building unsafe housing units which exposes them to risks in case of heavy rainfall (ECZ, 2000; CARE, 2011). However, residents find themselves in these precarious conditions not by choice but by circumstance. Poverty has been known as the major driving force of vulnerability to disasters (World Bank, 2001:146). Poor people settle in unplanned informal settlements on the periphery of major cities with the hope of opportunities for a decent standard of living in the city (Chibwe, 2011; Habasonda, 2012; World Bank, 2001). At times they could be aware of disaster risks but have no coping capacity and no mechanism to move to safer locations. There is a need to build local capacity in the community exposed to disaster risks (DiMP, 2005). Once the local community fully understands the disaster risks they are exposed to it is easier for them to participate in interventions from outside.

b) *Build local capacity*

It is essential to create awareness of the importance of building the local community's capacity to cope with disaster risks in the local community (ISDR, 2004; World Bank, 2001:146). Wisner (2005: 9) defines CBDRA as a method of self-assessment to determine coping and capacity against the impact of hazards. He states that CBDRA is about evaluating the coping capacity of a community in the face of a certain disaster or hazard. Therefore, the community at-risk must be helped with skills and knowledge about disaster risks they are exposed to. Any institution planning DRR activities should first identify influential members and key development agent players in the community before coming up with programmes. Women, children and the aged are the most vulnerable and must as such be involved in finding solutions to disaster risk reduction issues.

UNDP (2010) views DRR as a complex, cross-cutting issue that requires an interdisciplinary and multi-sectoral approach by bringing together the knowledge, skills and resources from different stakeholders.

c) *Collaboration among stakeholders*

Disaster affects people in different ways depending on their capacity and location (Wisner *et al.*, 2004; Allen, 2006). Disaster risk reduction requires a multi-sectoral approach (Perry and Liddell, 2003). All institutions and organisations working in a community must be involved in coming up with solutions. Sectors such as health, education, food security, agriculture and infrastructure development must all come on board. The community, however, takes the central stage (Holloway, 2007; Abarquez and Murshed, 2004; Anderson and Woodrow, 1998). Lack of collaboration in disaster risk reduction interventions may lead to duplication of efforts

to the community. There would for instance be an oversupply of relief commodities while other essential needs such as shelter and livelihoods are missing. One of the possible solutions is to come up with participatory initiatives which encourage community participation in DRR campaigns. Interventions done in a hurry only make the vulnerable community helpless once DRR support is withdrawn (Drinkwater, 2001). Rapid responses must be encouraged in effective DRR management.

d) Discourage swift campaigns and rapid assessments

The traditional reactive approach of disaster management encourages dependence of victim community on relief supplies rather than preparedness and sustainable development (Rajiv *et al.*, 2012:1634). When the community at-risk is fully involved chances of success will increase, and the mismanagement of resources are reduced (IFRCS, 2001). Community based disaster risk reduction makes the community part and parcel of the risk assessment and awareness campaigns (Abarquez and Murshed, 2004; UNDP, 2007; 2009: 2; Holloway *et al.*, 2008).

e) Strengthen local livelihoods

In order to implement an effective community based disaster risk reduction project, it is essential that significant efforts are undertaken at local level (Van Riet and Van Niekerk, 2012:2) to raise the awareness of communities and ensure that an appropriate level of skills and knowledge is passed on to the people before, during and after disasters (Pelling, 2007; GNDP, 2009; Hagelsteen, 2009). A community that is adequately prepared is likely to be resilient to disaster risks in future.

f) Sustainability and participatory approach

The challenge of DRR interventions today has been the lack of sustainability by the recipients of support. Communities in disaster-prone locations have in most cases relied on relief as part of their livelihood. After being affected by a disaster, victims in most cases still continue residing in the original disaster-prone settlements (Nchito, 2007). Community based disaster risk reduction approaches in this case focuses on making vulnerable communities become resilient. Sustainability is achieved by involving the community in assessing their exposure and vulnerability to disaster risks (Wisner, 2005).

V. MODEL FOR CBDRRM APPROACH

Vulnerability of communities is a combination of the socio-economic, physical, environmental and geographical profiles of the community (Van Riet and Van Niekerk, 2012; Todes, 2011). The responsibility is in the hands of the community at-risk to take action to reduce vulnerability and exposure to disaster risks. The

background of disaster management approaches came as a result of the need for community participation in addressing their vulnerability and exposure to disaster risks (Twigg, 2007).

Focus is on one approach by Imelda Abarquez and Zubair Murshed (2004) of the Asian Disaster Preparedness Centre (ADPC), *Titled: Community – Based Disaster Risk Management*. The stages, starting with outsiders, form part of the comprehensive disaster management under community based disaster risk reduction. The process of the community based disaster risk reduction model follows the seven stages (Figure 2). These stages may not be conclusive but can be adapted from stage one, if applicable, depending on the level of engagement with the community.

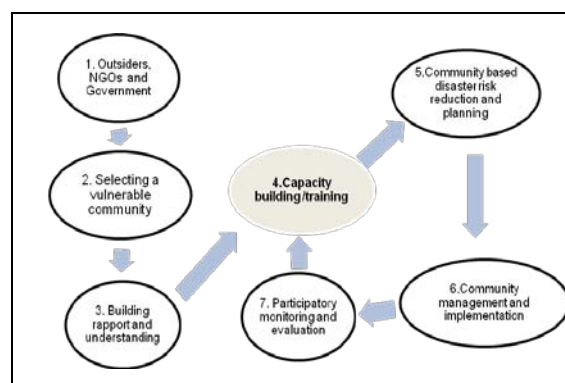


Figure 1: A Model for Community based Disaster Risk Reduction and Management

(Adapted from Asian Disaster Preparedness Centre, ADPC, 2009:17)

a) Outsiders (NGOs and Government)

Outsiders (this includes the government, NGOs and agencies) start by identifying a community vulnerable to disaster risks. This could be after a disaster struck a community and a lot of destruction was caused. Through participatory methodologies a community is involved in analysing its vulnerability and initiating DRR interventions. The role of the outsider is basically facilitation and capacity building of the local community towards vulnerability reduction (Torrent *et al.*, 2008). They support efforts by the community to reduce vulnerabilities and to enhance community capacities in the long term. This is done through providing technical, material, financial and political support, including participatory approaches in engaging the communities. By participating in community based DRR activities, local people not only become trained to improve awareness to better prepare for disasters, but also take part in the physical construction of structures. They also benefit through participation, and gain improved knowledge (Wenger *et al.*, 2002).

b) Selecting the vulnerable community

The criteria for identifying a vulnerable community depend on various factors other than exposure of the community to disaster risks. These factors include severity of exposure to devastating disaster risks, poverty status of the community, and readiness and willingness of the community to participate in disaster risk reduction activities (Cooke and Kothari, 2001). However, the criteria given is not exhaustive; other factors may also be considered, including the government's legal framework on services provision.

In order to encourage the participation of the community in developmental projects, a relationship has to be created between the outside institution and the community at-risk. The next section looks at building rapport and understanding with members of the community at-risk.

c) Building rapport and understanding

After the vulnerable community is identified, the next stage is to appreciate the local social relationship and background of the community. The focus is on analyzing the socio-economic status of the local people and identifying the most vulnerable members. The aim is to ensure active participation of all. Rapport building gives outside partners a clear picture of the skills level and status of and problems faced within the community (Chambers, 1997). After building rapport with the community, the next step is to build the capacity of the community in understanding disaster risk reduction management.

d) Capacity-building

Before the capacity of the community's disaster management preparedness can be built, the capacity of a community has to be assessed. Capacity is measured in terms of local resources, skills and knowledge within the community. According to Mwanamwambwa, (2009), Participatory Capacity and Vulnerability Assessment (PCVA), Participatory Needs Analysis and Assessments (PANA) are CBDRM strategies that help in the sustainability of DRR programs (White and Pettit, 2004). The participatory disaster risk assessment is conducted by the local authorities with the involvement of local people, community leaders and subject experts from outside. It is through this assessment that the community's available local resources, local knowledge, prevention, mitigation and response strategies are identified. Participatory tools are used in understanding the local capacities through training of trainers.

After the capacity of the community has been built, the actual community based disaster risk reduction planning process commences.

e) Community based risk reduction and management planning

After the capacity building stage, with vulnerabilities identified, the community - together with

the outsider NGOs and government - are engaged in CBDRM planning (Aberquez and Murshed, 2004). Local disaster risk reduction plans are formulated. The plans are community-owned, hence their implementation is localised using local resources. It is expected that the community will do the work without necessarily focusing on payment. During the process of CBDRM other interventions include implementation and Participatory Monitoring and Evaluation (PME).

f) Community management and implementation

Community based implementation involves both structured and non-structured activities which include: early warning, community training, construction and rehabilitation of infrastructure. The community, together with the outsiders, ensures that the activities are implemented as planned. Where lapses occur during the implementation, the outsider continues with capacity-building and closing knowledge gaps (Chambers, 2008).

g) Participatory monitoring and evaluation

The main aim of monitoring and evaluation is to provide checks and balances to ensure the sustainability of community based disaster risk reduction interventions. The community based organisation takes the responsibility for the overall implementation of the DRR activities at local level (Hagelsteen, 2009). Furthermore, PME involves the participation of key actors namely: local community, development agencies, local government and other stakeholders in measuring the progress made, and identifying necessary follow-up actions. Harmony among the stakeholders in PME is an important factor for the success of CBDRM.

The model (Figure 2) could be used to analyse community based disaster risk reduction interventions in informal settlements by the insiders - the community - and the outsiders - the government and NGOs.

VI. CONCLUSION

Theoretically, CBDRM approach is a more sustainable approach in managing disaster risks. It recognises that the community at-risk has the best knowledge and understands their vulnerability better than outsiders. The exposure and susceptibility of a community depends on a number of factors such as environmental, social, cultural, economical and historical factors. In accordance with the theoretical framework, disaster management agencies and nations lack comprehensive governance and legal frameworks and usually apply the top-down approaches of emergency responses. These result in failure to set clear disaster risk reduction targets for communities-at-risk to reduce their exposure and vulnerability. Effectively, disaster risks in informal settlements can be reduced by working with the local people to identify and

analyse their vulnerability and capacities, and to develop and implement a disaster risk management action plan which will support them in their progress towards sustainable living.

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